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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Kevin M. Ferguson

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11/14/2008

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EXAMINER

TRAN, TRANG U

ART UNIT

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/992,051	Applicant(s) FERGUSON, KEVIN M.	
	Examiner Trang U. Tran	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed July 28, 2008 have been fully considered but they are not persuasive.

In re 4, applicant argues that neither Yang nor De Haan nor their combination teaches or suggests "adaptive filtering...using a human vision model" because "human vision model" is a term of art well known to those of ordinary skill in the art of video signal processing and it denotes a machine vision model which is designed to match the perceptual response of the human vision system.

In response, the examiner respectfully disagrees. As discussed in the last Office Action, De Haan et al teach an adaptive filtering. De Haan et al discloses in col. 9, lines 23-34 that "The present implementation of the invention can also be used in a method of reducing interference artifacts in television pictures, which often introduce a single dominant sine-wave in a single direction which corresponds to a single peak in the two-dimensional frequency domain. By means of a partial block transform, it is possible to obtain the frequency coefficient(s) representing this interference, and to correct the signal with the difference between the inverse transform of the temporally filtered version of this or these coefficients and that of the original one. A reduction of the interference is thus obtained without using a full field memory". From the above passage, obtaining the frequency coefficient(s) representing the interference is **model** and this model is for human vision because this model is used for reducing interference

artifacts in television pictures. Thus, the adaptive filtering of De Haan et al is a human vision model as required by claimed invention.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (US Patent No. 6,573,940 B1) in view of De Haan et al. (US Patent No. 6,122,016).

In considering claim 1, Yang discloses all the claimed subject matter, note 1) the claimed an apparatus for providing a smooth interpolated video signal at any desired rate from a slower rate video signal (Fig. 1) means for up-sampling the slower rate video signal to the desired rate is met by the upconversion element 110 that provides upconverted samples $b(n)$ at a higher sample rate, $L \cdot f_{in}$ (L is integers) (Fig. 1, col. 4, lines 1-48), and 2) the claimed means for filtering the up-sampled slower rate video signal using a human visual model to produce the smooth interpolated video signal is met by the filter 112 which filters the samples with a transfer function $h(n)$ and removes the alias spectral components (Fig. 1, col. 4, lines 1-48).

However, Yang explicitly does not disclose the claimed filtering the up-sampled slower rate is an adaptive filter.

De Haan et al teach in a method of processing a video signal, including the step furnishing a filtered signal in response to the video signal, the filtering is adapted in

dependence upon the statistical property (AC) of a modification effected by the filtering in a previous time interval of the video signal (see the abstract, Figs. 1-2 and 5, col. 5, line 30 to col. 7, line 8 and col. 8, line 56 to col. 9, line 51).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the adaptive filter as taught by De Haan et al into Yang's system in order to remove artifacts ("noise") from the video image which are visible to a human viewer.

In considering claim 2, the claimed further comprising means for restoring a direct current level for the smooth interpolated video signal is met by the adder 15 which corrects the DC-component of the video signal by the difference between the filtered and the original DC-component of the reference video signal (step VI of Fig. 5, col. 8, lines 26-55 of De Haan et al).

Claim 3 is rejected for the same reason as discussed in claim 1 above.

Claim 4 is rejected for the same reason as discussed in claim 2 above.

Claim 5 is rejected for the same reason as discussed in claim 1 above.

Claim 6 is rejected for the same reason as discussed in claim 2 above.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang U. Tran whose telephone number is (571) 272-7358. The examiner can normally be reached on 9:00 AM - 6:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

November 09, 2008

/Trang U. Tran/
Primary Examiner, Art Unit 2622

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